

Syllabus for: TEC 537

## **COURSE INFORMATION**

Emphasis of this class is placed on the sophisticated integration of software into teaching. Subjects include utilizing advanced word processing and database applications in the classroom, publishing software as teaching tools for interactive learning, and using Web freeware as a viable alternative in schools.

## **CREDIT HOUR(S)**

4

## **PREREQUISITES AND CO-REQUISITES**

None.

## **REQUIRED COURSE MATERIALS**

- Morrison G., & Lowther, D. (2010). *Integrating computer technology into the classroom: Skills for the twenty first century* (4<sup>th</sup> ed.). Upper Saddle River, NJ: Pearson. ISBN-13: 978-0135145296
- Refer to individual modules for specific required readings and resources.

## **Module 4: Topics and Objectives**

### **Research Software: The Open Source Classroom**

- Investigate research software integration. (ITEA/CTTE Standards 4, 6, and 8)
- Examine freeware and open source. (ITEA/CTTE Standards 4 and 6)

## **Module 4: Assignments**

### **1) Individual:**

#### **a) Resource Database: Part 1**

i) This assignment will be split into two parts. Part 1 is due by the end of Module 4 and Part 2 will be due by the end of Module 7.

#### **ii) Part 1**

(1) Complete a tutorial on your selected database application utilizing a source located online.

**(a) Microsoft Excel can be used as a database. However, research other options such as MSSQL, FileMaker Pro, Lotus SmartSuite's Approach, or Microsoft Access.**

**(2) The data you will be incorporating into the database will come from the Module 1 Discussion Forum.**

**(3) Compile seven resources (which you find have value) from those that were presented in the forum into your database. This database will become a highly utilized tool during the course's progression.**

**(4) Create seven fields in the database. Some possible fields are:**

**(a) Software category (required)**

**(b) Title (required)**

**(c) Annotation (required)**

**(i) Annotations should not be copied and pasted but created to address individual classroom requirements.**

**(ii) Example annotation**

**1. Inspiration is a tool for visual thinking. It is a software application which allows students to easily create and update concept maps, mind maps, idea maps, diagrams, and webs. It is beneficial for grades 4–10 along with language arts and reading subjects. This software can be used for Mac and Windows systems.**

**(d) ISTE NETS technology standards (required)**

**(e) URL (required)**

**(f) Digital tools necessary**

**(g) Subject**

**(h) Grade level**

**(i) Technology skill level**

**(5) Sort the data, and if possible experiment with the filtering options of the database application.**

**(6) Refer to Resource Database Scoring Sheet, located within the Additional Resources folder in Canyon Connect.**

**(7) Submit three versions of the database demonstrating the data sorted in different ways by the end of Module 4.**

### iii) Part 2

**(1) After submitting your database to the instructor, select at least two open source software applications from the discussion forum to add to your database. Preferably you should add all those that you find applicable to your content and grade level. Part 2 will be due by the end of Module 7.**

## 2) Collaborative Learning Community: None

### READINGS

#### Software Classifications

Instructors in today's classrooms will need to become familiar the following terms:

- *Research software.* Applications that provide the ability to access resources
- *Freeware.* Free software that may contain restrictions, such as for non-commercial use only
- *Open-source software.* Applications that give the user the ability to change and improve the software design
- *Free software.* Software that is free in all senses, including the ability to copy and reuse the software
- *Licensed software.* Purchased and installed applications with conditional contracts or one-time fees
- Free and Open Source Software
- Many school systems use licensed software. Before the new open-source and free software trend, schools use to receive software packages from vendors for creating labs or updates. However, free or open-source software for educational use introduces more options for educators.
- Free, open-source and freeware applications allow instructors to find a variety of no-cost programs to specialize technology implementation specific to their content and grade levels. Free and freeware software are commonly older programs which may not always be used on multiple systems, whereas open-source programs are newer, based on educational standards, and can be used for multiple operating systems (Roblyer, M. D. 2004).
- In classrooms where there are budget constraints and very little in technology available, free and open-source software helps educators begin to meet mandated educational technology standards and help instructors enhance curriculum, instructional strategies, and presentation methods.

#### Assessment

Before selecting research or open-source software, educators should always assess the capabilities of the systems within the classroom. The instructor must have a clear understanding of the networks and existing software available to them in order to use downloaded or free resources effectively.

In many districts or schools there will be an intranet, or an internal network, created to increase collaboration, communication, and information between educators and staff. An intranet will not rely on a single operating platform, but allow multiple users, often with a variety of operating systems, to gain access. An instructor may already find software applications that have been approved for student use available or discussed on the school or district intranet. Instructors should research these options first, since they have often already cleared the time-constraining hurdles of board approval, firewall access, technology support, and funding. Educators should always be cognizant that intranets can run slowly or not be accessible at all from remote locations (Roblyer, 2004).

The most widely known network is the Internet. The Internet can provide a world of options for instructors who are first aware of their school's technology environment. Part of understanding technology applications is having the ability to identify software that can be used within the school network without causing problems, (e.g., conflicts with filtering, blocking, and virus software.)

The district's technical coordinator can clarify conditions that might present obstacles for downloading and installing new software on school computers. In some networks, only the IT department has the administrative access to download or install software applications (Roblyer, 2004). Additionally, staff is sometimes unable to adjust the parameters for typical educational filtering software used to block games, advertisements and inappropriate content, which causes some educationally appropriate Web sites and software to be inadvertently blocked.

Virus software is essential for any network; it reduces risks to the system infrastructure from malicious attack. Just browsing the Internet does not put a computer at risk; however, downloading and installing an application may be able to infect a computer due to viruses attached to various types of files (Roblyer, 2004). Most viruses are spread through flash drives. Therefore, instructors must make sure of adequate virus protection, and perform regular virus scans to all hardware, especially before connecting personal systems to the network, using a flash drive to transport files, or downloading files from outside the school's network. In addition, instructors should limit the use of students' flash drives within the classroom. Some indications that a computer may be infected can be:

- Computer programs take longer to load than normal
- New files keep appearing on the system or files have strange names
- Strange sounds or beeping noises come from the computer or keyboard
- Strange graphics display on the computer monitor
- Programs act irregularly

## CONCLUSION:

Research and open-source software, although not a new resource, is a new application that educators are implementing into the classroom. With all new resources comes the need for a thorough understanding of all its components, including how they will affect the optimal learning experience within the classroom.

### 1) Textbooks:

- a) Morrison et al., chap. 6

### 2) eLibrary Resources:

- a) Nelson, J., Christopher, A., & Mims, C. (2009). *TPACK and Web 2.0: Transformation of teaching and learning*. TechTrends: Linking Research & Practice to Improve Learning, 53(5), 80–87.  
<http://library.gcu.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=43865445&loginpage=Login.asp&site=ehost-live&scope=site>

### 3) Electronic Resources:

- a) Google. (n.d.). *Google for educators*.  
[http://www.google.com/educators/index.html#utm\\_campaign=en&utm\\_source=en-ha-na-us-google&utm\\_medium=ha&utm\\_term=google%20education](http://www.google.com/educators/index.html#utm_campaign=en&utm_source=en-ha-na-us-google&utm_medium=ha&utm_term=google%20education)

- b) International Society for Technology in Education (ISTE). (n.d.). *Software and hardware*.  
[http://www.iste.org/AM/Template.cfm?Section=Software\\_and\\_Hardware&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=23&ContentID=3348](http://www.iste.org/AM/Template.cfm?Section=Software_and_Hardware&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=23&ContentID=3348)
- c) VanderMolen, J. (n.d.). *Save money with freeware and open source software*.  
[http://www.guide2digitallearning.com/tools\\_technologies/save\\_money\\_freeware\\_and\\_open\\_source\\_software](http://www.guide2digitallearning.com/tools_technologies/save_money_freeware_and_open_source_software)

#### 4) Web Sites:

- a) EarthCam. <http://www.earthcam.com>
- b) Educational Freeware. <http://www.educational-freeware.com/>
- c) Little clickers. <http://www.littleclickers.com/>
- d) Net Know-How. <http://www.netknowhow.ca/>
- e) TeAchnology. <http://www.teach-nology.com/>
- f) Virtual Tours. <http://www.virtualfreesites.com/tours.html>

#### 5) Lectures/GCU Resources:

- a) Resource Database Scoring Sheet

## Module 5: Topics and Objectives

### Communication Software

- **Analyze communication software advantages and disadvantages within the learning environment. (ITEA/CTTE Standards 4, 6, 8, and 9)**
- **Present and critique integration practices of communication software with colleagues via a discussion board. (ITEA/CTTE Standards 6, 7, 8, and 9)**

## Module 5: Assignments

### 1) Individual:

#### a) Resource Database Part 2

- i) Examine and select two research software applications relevant to your curriculum to add to your database. Make sure all of the fields within the database are filled when adding in the new applications.**
- ii) The database resource will be resubmitted to the instructor in Module 7.**

### 2) Collaborative Learning Community:

#### **a) Communication Software**

**i) This assignment is divided into two parts. Part 1 is due by the end of Module 5 and Part 2 is due by the end of Module 6.**

**ii) Within the CLC, each member will choose one option from those listed below. No two members may choose the same topic.**

**(1) Blogs**

**(2) Wiki**

**(3) Podcasts**

**(4) Online chat**

**(5) Instant messaging**

**(6) Message boards**

#### **iii) Part 1: Individually**

**(1) Create a process document or teacher resource outlining the steps of setting up the designated technology application for a lesson. You may choose the presentation format of the resource (tutorial, screen shots, etc.).**

**(2) One member of the CLC will be designated to create a Communication Software Resource thread.**

**(3) Each member will post the individual resource for the other members by the end of Module 5. Within your individual post you will need to address the advantages and disadvantages of your application.**

**(4) Post assignment to the CLC forum by the end of Module 5.**

#### **iv) Part 2: Collaboratively**

**(1) Each member of the CLC will be required to examine each artifact posted and respond with constructive feedback and comments. In addition each member is required to provide further examples of successful integration strategies for each application.**

**(2) The discussion portion of the assignment will take place during Module 6.**

**(3) This assignment uses a grading rubric that can be viewed at the assignment's drop box.**

**(4) Submit the assignment to the instructor by the end of Module 6.**

#### **READINGS**

### 1) Textbooks:

- a) Morrison et al., review chap. 4

### 2) eLibrary Resources:

- a) Lamb, A., & Johnson, L. (2009). Web feeds delivered to your digital doorstep. *Teacher Librarian*, 36(3), 66–70.  
<http://library.gcu.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=36963465&loginpage=Login.asp&site=ehost-live&scope=site>
- b) Royal, K. (2008). Creating technology literate educators. *District Administration*, 44(5), 18.  
<http://library.gcu.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=32055560&loginpage=Login.asp&site=ehost-live&scope=site>

### 3) Electronic Resources:

- a) Education World. (n.d.). *Techtorials archive*. [http://www.education-world.com/a\\_tech/archives/techtorials.shtml](http://www.education-world.com/a_tech/archives/techtorials.shtml)

### 4) Web Sites:

- a) Blogger. <https://www.blogger.com/start>
- b) iTeacher, <http://iteacher.edublogs.org>
- c) Podomatic. <http://www.podomatic.com/featured>
- d) ProBoards. <http://www.proboards.com/>
- e) RSS Network. <http://www.rss-network.com/>
- f) Skype. <http://www.skype.com/>
- g) Stinto. <http://www.stinto.net/>
- h) Wikispaces. <http://www.wikispaces.com/>

## Module 6: Topics and Objectives

### Problem-Solving and Educational Software

- **Analyze problem-solving and educational software features. (ITEA/CTTE Standards 4, 6, and 8)**
- **Determine appropriate technology application(s) for a given task or problem. (ITEA/CTTE Standards 6, and 8)**

### Module 6: Assignments

#### 1) Individual:

### **a) Resource Database Part 2**

- i) Select at least two communication software applications from the CLC discussion forum to add to your database. Preferably you should add all those that you find applicable to your content and grade level.**
- ii) Make sure all of the fields within the database are filled when adding in the new applications.**
- iii) Refer to Resource Database Scoring Sheet, located within the Additional Resources folder in Canyon Connect.**
- iv) The database resource will be resubmitted to the instructor in Module 7.**

## **2) Collaborative Learning Community:**

### **a) Part 2: Communication Software**

- i) Post your individual resource in the CLC forum for the other members of the CLC.**
- ii) Each member of the CLC will be required to examine each artifact posted and respond with constructive feedback and comments. In addition, each member is required to provide further examples of successful integration strategies for each application.**
- iii) The discussion portion of the assignment must be completed by the end of Module 6.**
- iv) This assignment uses a grading rubric that can be viewed at the assignment's drop box.**
- (v) Submit the assignment to the instructor by the end of Module 6.**

## **Module 7: Topics and Objectives**

### **Software Evaluation**

- Evaluate software to effectively improve learning for a range of student diversity. (ITEA/CTTE Standards 6, 8, and 9)**
- Create a software evaluation tool. (ITEA/CTTE Standards 4, 6, and 8)**

## **Module 7: Assignments**

### **1) Individual:**

#### **a) Resource Database Part 2**

- i) Select two problem solving software applications and two educational software applications relevant to your curriculum to add to your database. Make sure all of the fields within the database are filled when adding in the new applications.**



ii) Using the database you have constructed create a report in which only the title, annotation, and ISTE NETS technology standards are presented.

iii) Refer to the Resource Database Scoring Sheet, located within the Additional Resources folder in Canyon Connect.

iv) Submit the database and report to the instructor by the end of Module 7.

**b) Software Evaluation Assignment (e-Portfolio Assignment)**

i) Review your resource database and compile a list of criteria/features you considered when selecting software applications for your class.

ii) Design an appropriate software evaluation tool for your curriculum

iii) Refer to the Software Evaluation Assignment Guidelines, located within the Additional Resources folder in Canyon Connect.

iv) With your evaluation tool, review two similar software applications for the same grade and content.

v) Document the evaluation results on your evaluation tool for each application.

vi) Provide a detailed evaluation summary (250 words) specifying which application you would use and why. Make sure to support your choice using data from your evaluation tool.

vii) Prepare this assignment according to the APA guidelines found in the GCU APA Style Guide, located in the Student Success Center. Provide in-text citations and a reference page for the written evaluation summary.

viii) This assignment uses a grading rubric that can be viewed at the assignment's drop box.

ix) Submit the written evaluation and two evaluation tools to the instructor by the end of Module 8. You will also submit the assignment to TaskStream.

**2) Collaborative Learning Community: None**

## **Module 8: Topics and Objectives**

### **Technology Integration**

- Apply strategies for identifying and solving routine technology problems. (ITEA/CTTE Standard 4)
- Compare current and emerging software. (ITEA/CTTE Standard 4 and 10)

## **Module 8: Assignments**

## 1) Individual:

### a) Software Evaluation Assignment (E-portfolio)

- i) As assigned in Module 7, complete the Software Evaluation Assignment. Refer to Module 7 for complete information.
- ii) Submit the written evaluation and two evaluation tools to the instructor by the end of Module 8.
- iii) Additionally, submit the assignment in TaskStream. Directions for submitting to TaskStream can be found on the College of Education's page in the Student Success Center.

## COURSE ASSIGNMENT MATRIX

Assignment Name	Module Due	Percentage of Grade	ITEA/CTTE
Individual Assignments			
Software Questionnaire	1	1	Standard 4
Word Processing Resource	2	5	Standard 4 and 6
Spreadsheet	3	10	Standard 4 and 6
Resource Database Part 1	4	10	Standard 4, 6 and 8
Resource Data Part 2	7	10	Standard 4, 6 and 8
Software Evaluation Assignment (e-Portfolio Assignment)	8	20	Standard 6, 8 and 9
Discussion Forum	1-8	24	
Collaborative Learning Community			
Communication Software	6	20	Standards 4, 6, 7, 8, and 9
<b>Total Points</b>		<b>100</b>	

## GRADING SCALE AND POLICIES

Refer to the GCU policy handbook and the course policies document posted by your faculty for specific policy information.